

Oral Non-Specific Lesions in Patient with Crohn's Disease-Case Report

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ABSTRACT

Crohn's disease together with ulcerative colitis belongs to inflammatory bowel diseases. Granulomatous inflammatory process may affect all layers of the gastrointestinal wall, from the mouth to the anus, most often in the ileocecal region. The oral pathologies observed in patients with Crohn's disease may be specific or non-specific, may anticipate the appearance of intestinal CD symptoms or occur after years of its duration. Case of unspecific oral lesions observed in patient with Crohn's disease is described in this article.

Keywords: Crohn's Disease; Oral Pathology; Oral Manifestations

Abbreviations: NOD2: Nucleotide-Binding Oligomerization Domain Containing 2; CRP: C-Reactive Protein; CDAI: Crohn's Disease Activity Index; TNF: Alfa - Tumor Necrosis Factor α

Introduction

Together with ulcerative colitis, Crohn's disease (CD) is an inflammatory bowel disease. A chronic granulomatous inflammatory process extends throughout all layers of the gastrointestinal wall, from the mouth to the anus, and most often in the ileocecal region [1,2]. The etiopathogenesis of CD is not fully known. Genetic factors (including mutation of the *NOD2* gene), immune system disorders, environmental factors (such as harmful dietary components), and altered intestinal microbiota must all be taken into account [3]. CD occurs with periods of exacerbation of the inflammatory process and symptom-free remission. During exacerbation periods, abdominal pain, diarrhea, fever, weight loss, sideropenic anemia, increased CRP, as well as hypoproteinemia can all occur. In endoscopic examination, inflammatory infiltrates with hyperemia, edema of the mucosa, ulcers are present and so-called cobblestoned mucosa. In histopathological examination, inflammation and non-caseating granulomas can be found in

sections of the altered intestinal mucosa. In some patients, CD occurs with local complications, such as fistula formation (mainly intestinal and perianal fistulas), narrowings, and intra-abdominal and parenteral abscesses [4,5].

Disease activity is determined by means of a Crohn's Disease Activity Index (CDAI) indicator, which accounts for seven different clinical parameters. In the treatment of inflammation exacerbation, glucocorticoids, aminosalicylates, immunosuppressants (azathioprine, methotrexate), biological drugs, for example, anti-TNF-alpha monoclonal antibodies (infliximab, adalimumab) and $\alpha 4\beta 7$ integrin (vedolizumab), are all used to induce remission. In addition, anti-symptomatic, analgesic, anti-diarrheal drugs, and in the case of septic complications, antibiotic therapy is used, with drugs such as ciprofloxacin and metronidazole. Apart from pharmacotherapy, it is recommended that an appropriate diet be followed, that smoking is stopped and infectious diseases are prevented [6-9].

Oral Manifestations in CD Patients

Manifestations in the oral cavity of patients with CD were first described over 50 years ago (Dudeney) [10]. The changes are easily diagnosed during thorough physical examination in approximately 0.5-20% of adults, and more often in children. However, they are often overlooked during dental examination [11,12]. The oral manifestations may or may not be specific to CD and can anticipate the appearance of intestinal CD symptoms, or even occur years after a patient becomes ill, especially during periods of exacerbation [13]. Specific lesions, occurring less often, are similar to those observed in intestinal endoscopic examination and appear in the form of cobblestoned mucosa, mucosal hypertrophy with the presence of fissures and deep, linear ulcerations. Non-specific changes due to chronic inflammation, malnutrition, malabsorption or drug side effects are more frequently observed [14-19].

Food deficiencies and their consequences can be associated with limited consumption of foods that cause pain and other symptoms, as well as losses from the gastrointestinal tract caused by diarrhea, bleeding or malabsorption in the small intestine segment altered by inflammation. In addition, in the exacerbation of CD, an increased metabolic demand due to inflammatory increased catabolism is observed, leading to a deficiency of proteins, vitamins and minerals. These deficiencies may manifest as changes in the patient's oral cavity. Non-specific lesions in the oral cavity in CD include RAS, angular cheilitis, glossitis, chronic submandibular lymphadenopathy, perioral erythema, and recurrent purulent inflammatory lesions (Table 1) [15,16,20]. Treatment of oral lesions in CD is difficult due to the advancement of the disease, nutritional deficiencies, malabsorption, or contraindications to the use of certain groups of drugs. Topical protective, anti-inflammatory, analgesic and antiseptic preparations are used, and in the case of bacterial and fungal complications, antybiogram and antimycogram-based targeted treatment. In the active phase of the disease, the basic treatment is deficiency supplementation and systemic treatment [11,21,22].

Table 1: The oral consequences of vitamins and microelements deficiency.

Deficiencies	Oral Manifestations
Vitamin B12	Painful atrophic changes of the mucosa and tongue, aphthae, angular cheilitis, burning mouth syndrome, taste disturbance
Vitamin A	Angular cheilitis, dry mouth
Vitamin C	Swelling of the gums, bleeding, ulceration
Vitamin D	Decalcification of bone tissue
Vitamin K	Decalcification of bone tissue
Ferrum	Pallor of the mucosa, atrophic glossitis, angular cheilitis
Zinc	Exfoliation of the oral epithelium, burning mouth syndrome of the mouth, taste disturbance

Case Report

In 2019, a 28-year-old woman reported with a CD exacerbation and malnutrition, requiring hospitalization at the Clinical

Department of Gastroenterology and Hepatology of the University Hospital in Krakow. CD was diagnosed in 2010 and, the patient was treated chronically with immunosuppressants. One and a half months before her admission to the hospital, increased body temperature, decreased appetite, weakness, gastrointestinal disorders, dyspeptic symptoms and diarrhea, as well as periodic joint pain and eczema were all noted. The patient's laboratory blood tests were as follows: Hb = 11.3 g/dL, (N>12), erythrocytes 3.36 million/ μ L, (N>4), leukocytes 10.570/ μ L (N <10 000), platelets 459,000 / μ L (N <450.000), CRP 70 g/L (N <5), iron 3.5 μ mol/L (N>5.8). In her medical history, the patient reported the occurrence of frequent, recurrent, painful lesions in the oral cavity that had not so far been diagnosed or treated. On the day of admission to the hospital, she reported oral complaints in the form of pain and a burning sensation when eating food. During the first dental examination, irregular erythematous patches on the cheek mucosa were observed, as well as a white coating on the distal dorsal surface of the tongue, exfoliative lip inflammation (Figure 1) and angular cheilitis (Figure 2). Due to the oral manifestations and reported complaints, oral swabs for bacteriological and mycological examination were collected.

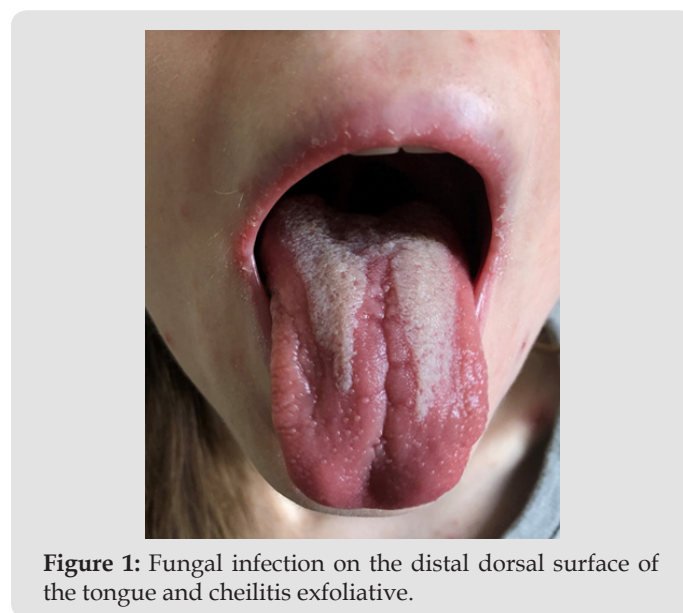


Figure 1: Fungal infection on the distal dorsal surface of the tongue and cheilitis exfoliative.



Figure 2: Angular cheilitis.

During subsequent follow-up visits, after 7 and 14 days, persistent erythema spots and smoothing of the dorsal surface of the tongue were observed. Mycological examination showed confluent growth of *Candida albicans*. Bacteriological examination was negative. Treatment included symptomatic therapy of the underlying disease and azathioprine 2 mg/kg/day, mesalazine 2 g/day, and biological treatment (adalimumab). Topical treatment was used to relieve symptoms in the mouth. On the basis of an antimycogram, targeted antifungal treatment with nystatin (brushing four times a day) and ointments with nystatin for the angles of the mouth were applied. The patient was hospitalized for one month with moderately-severe CD. She is still under gastrological follow-up; an improvement in the local state of her oral cavity has been observed (Figures 3 & 4). There has been no recurrence of oral manifestations reported by the patient up to the time of preparation of this case report.



Figure 3: Clinical improvement - healing of the angular cheilitis.



Figure 4: Clinical improvement to the tongue mucosa after antifungal therapy.

Conclusion

The presented manifestations in the oral cavity of Crohn's disease patient are defined as non-specific. They coexist with the disease and are associated with food deficiencies and absorption disorders as a consequence of intestine inflammation, as well as (possibly) due to the effects of immunosuppressive treatment. The implementation of basic treatment and supplementation of micronutrient deficiencies led to healing of the oral lesions. Therefore, during subsequent visits an improvement in the oral soft tissue was observed. We emphasize that a personalized approach to treatment should consider close cooperation between the dentist and gastroenterologist.

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Disclosures/Conflict of interest

The authors declare that there is no conflict of interest.

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